

PROCEEDINGS
OF THE
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TWO NEW BIGHORNS AND A NEW ANTELOPE FROM
MEXICO AND THE UNITED STATES.

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In the course of field work in Mexico in 1899, Mr. E. W. Nelson, a field naturalist of the U. S. Biological Survey, and his able assistant Mr. E. A. Goldman, secured a series of eight Mountain Sheep or Bighorns in the barren desert mountains about Lake Santa Maria, Chihuahua. Comparison of these specimens with their nearest allies, *Ovis nelsoni* and *O. canadensis**, shows that they differ specifically from either. The new species may be known as follows:

*The type locality of the northern Bighorn, *Ovis canadensis* Shaw, is the Rocky Mountains of Alberta, Canada. The Biological Survey has secured topotype material from this region (collected by J. Alden Loring) which has been used in the comparisons on which the present paper is based.

Respecting the priority of the name *canadensis* Shaw (1803), over *cervina* Desmarest (1804), it may be stated that both Bolton (Cat. Sci. Periodicals, p. 624, 1885) and Sherborn (Ann. and Mag. Nat. Hist. 6th Ser. XV, pp. 375-376, 1895) after independent investigation agree that Shaw's name *canadensis* was published in 1803, while no one ever claimed that Desmarest's name *cervina* appeared before 1804. In the winter of 1890, when preparing my report on the Mammals of Idaho, and unaware of Bolton's determination of the date, I looked into the matter with some thoroughness and adopted the name *canadensis* as of unquestionable priority (N. Am. Fauna, No. 5, p. 81, 1891).

Ovis mexicanus sp. nov.

Type from Lake Santa Maria, Chihuahua. No. 99,342 ♂ ad. U. S. National Museum, Biological Survey Collection. Collected Sept. 16, 1899 by E. W. Nelson and E. A. Goldman. Orig. No. 13,974.

Characters.—Size large; color dark, much darker than *nelsoni* but less dark than *canadensis*; horns large; massive, dark, not strongly out-curved; hoofs and molars larger than in *O. canadensis*; ears long and large, nearly double the size of those of *canadensis*, measuring from occiput, in dry skin, 110-116 mm.; tail long and slender, measuring about 130 mm. Color pattern similar to that of *canadensis*.

Color.—Body color above and below drab brown, darkest on throat, legs, and tail; no trace of dorsal stripe; muzzle decidedly paler than rest of face; rump patch broader and more squarely truncate anteriorly than in *canadensis*; dark color on hind leg covering much more of inner side of thigh than in *canadensis*; but much less of lower leg, the white spreading broadly over the posterior and inner aspects, and on the inner side ending abruptly just above the calcaneal joint; whitish of chin broader and less sharply defined.

Cranial characters.—Skull as a whole large and massive. Compared with *canadensis*, orbits less prominent; frontals flatter (less 'dished' in forehead); basioccipital narrow, its sides nearly parallel, its muscular facets small and median sulcus broad; occiput (viewed from behind) much narrower; depth of face (above molars) less; permaxillæ longer, more slender, and reaching much farther back; jugal relatively small and less expanded anteriorly; lachrymal long, reaching well out toward premaxilla; paroccipital narrower and more slender; *lips of posterior nares* (behind hamulars) *thin* and somewhat everted [in *canadensis* thickened and *much swollen*]; angle of mandible obsolete; coronoid process lower and less expanded. Molar teeth larger. Horn cores longer, with longer curve and less flaring base.

Horns.—Large and heavy, but longer and less massive than those of *canadensis*; upper (flat) side narrower; base less flaring; orbital corner shortly rounded off (not produced).

Measurements.—Type specimen, ♂ ad.: Total length 1530; tail vertebræ 130; hind foot 425; height at shoulder 900. An ad. ♀ from type locality: total length 1490; tail vertebræ 130; hind foot 405; height at shoulder 880.

In examining a number of skulls of the Bighorn in the collection of the U. S. National Museum it is found that those from the Plains region of the western Dakotas and eastern Montana differ in important characters from those from the Rocky Mountains in Montana and Alberta. These differences appear to be constant and necessitate the recognition of the Plains animal as a subspecies of *Ovis canadensis*. The chief differences are the great size of the molar teeth and the massive-

ness and depth of the lower jaw. No skins have been examined. The new form may be known as follows:

Ovis canadensis auduboni subsp. nov.

Type from 'Upper Missouri'. No. $\frac{1520}{226170}$ ♂ yg.-ad. U. S. National Museum. Believed to have been collected in the Badlands of South Dakota in 1855 by Dr. F. V. Hayden, on the Warren Expedition.*

Characters.—Size large; skull and horns broad and massive; molar teeth much larger than in any known American sheep, the upper tooth-row in adult males measuring 96 mm. or more, and the 3 upper molars 63-65 mm. Underjaw (in type specimen) massive, heavy posteriorly, deeply bellied (depth under last molar 52 mm.); angle broadly rounded. In *canadensis* the jaw is light throughout and the angle, while small, is marked. Horns narrower and as a rule longer than in *canadensis*.

The animal is named in honor of Audubon, who in 1843 obtained from the Badlands specimens which he supposed the same as the Rocky Mountain species.†

In the desert region of northwestern Chihuahua, not far from Lake Santa Maria where the new *Ovis mexicanus* was obtained, Mr. Nelson and Mr. Goldman secured a series of eleven Pronghorn Antelopes. Comparison of these specimens with specimens from the northern Plains develops differences which seem to necessitate the separation of the southern from the northern animal. It may be known as follows:

Antilocapra americana mexicana subsp. nov.

Type from Sierra en Media, Chihuahua, Mexico. No. 98,742 ♂ yg. ad. U. S. National Museum, Biological Survey Coll. Collected October 4, 1899, by E. W. Nelson and E. A. Goldman. Orig. No. 13,989.

Characters.—Similar to *A. americana* but paler (in fresh fall pelage drab brown with a tinge of ecru, becoming cinnamon when the tips of the hairs wear off); mane absent or reduced to a narrow line of dark

*The U. S. National Museum register contains entries of several Mountain Sheep collected by Dr. F. V. Hayden on Lieut. G. K. Warren's Expedition to the Upper Missouri in 1855. In Lieut. Warren's report on his 'Explorations in the Dakota Country in the year 1855' (published in 1856), Dr. Hayden states that the bighorn was abundant in the region known as the badlands, and the narrative shows that the particular badlands meant are those between the Cheyenne and White Rivers in South Dakota.

†Quadrupeds of North America, Vol. II, pp. 163-172. 1851.

hairs on the nape; a median dorsal dark streak usually present on neck, sometimes reaching posteriorly to shoulders; head markings more sharply defined; occiput distinctly white or whitish, clearly defined posteriorly, and divided by a median dark stripe.

Cranial characters.—Skull similar to that of *americana* but orbits less abruptly protruding antero-inferiorly; premaxillæ more slender, especially posteriorly; bullæ thinner; lips of posterior nares longer (facial part of skull set farther forward).

Measurements.—Total length 1420; tail vertebræ 145; hind foot 410; height at shoulders 830.